

Genus *Badnavirus*



Genome: Reverse Transcriptase **Host:** Plants

Compiled for the VIth ICTV Report by Lockhart BEL, Olszewski NE, Hull R

Index to Taxonomic Structure of the Family

1. Genus *Badnavirus*

Type Species Commelina yellow mottle virus

List of Species in the Genus

List of Tentative Species

List of Unassigned Viruses in the Family

Relationship to other Taxa

References

Genus *Badnavirus*

Type Species

commelina yellow mottle virus (ComYMV)

commelina yellow mottle virus (x 150,000). Electron micrograph from the Department of Plant Pathology, Rothamsted Experimental Station, UK.

Taxonomic Structure of the Genus

Species in the Genus

Virus name (*synonym*) followed by [Genomic sequence accession number]; {host}; (**Acronym**)

banana streak virus (**BSV**)

cacao swollen shoot virus [L14546] (**CSV**)

Canna yellow mottle virus (**CaYMV**)

Commelina yellow mottle virus [X52938] (**ComYMV**)

Dioscorea bacilliform virus (**DBV**)

kalanchoe top-spotting virus (**KTSV**)

Piper yellow mottle virus (**PYMoV**)

rice tungro bacilliform virus [X57924] (**RTBV**)

[M65026]

Schefflera ringspot virus (**SRV**)

sugarcane bacilliform virus [M89923] (**SCBV**)

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Tentative Species in the Genus

Aucuba bacilliform virus {*Aucuba japonica*} (AuBV)
mimosa bacilliform virus {*Albizia julibrissin*} (MBV)
taro bacilliform virus {*Colocasia esculenta*} (TaBV)
Yucca bacilliform virus {*Yucca elephantipes*} (YBV)

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Unassigned Viruses in the Family

None reported.

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Relationship to Other Taxa

Badnaviruses are similar to caulimoviruses in genome type (dsDNA). They differ from caulimoviruses in genome size, particle morphology, vector taxa, and histopathology.

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References

Index of Viruses

links to lists containing the ICTV Classification and Nomenclature of Viruses

Virus databases on-line

home page with links to the available virus databases

Note: This World Wide Web server is under development and is subject to many changes and corrections. If you have questions about this project please contact us. Your comments and help will be appreciated.

Author: C. Büchen-Osmond *Created May, 95 Last updated: 28 June, 1995*

**Descriptions and Lists from the VIDE Database****Banana streak *badnavirus*****Index**

- + Nomenclature
- + Host range, transmission and symptoms
- + Physical and biochemical properties
- + Taxonomy and relationships
- + Comments and References

Data collated by A.A. Brunt, S. Molyneux, and B.E. Lockhart, 1987.

Nomenclature**Acronym**

BSV

ICTV decimal code

07.0.1.0.002

Host range and symptoms

First reported in *Musa* spp.; from Morocco; by Lockhart (1986).

Natural host range and symptoms

- + *Musa* spp. - chlorotic leaf streaks, necrosis.

Transmission

Virus not transmitted by mechanical inoculation.

Geographical distribution

Spirals in Morocco.

Experimental host range

Several (3-9) families susceptible. Experimentally infected plants mostly show chlorotic and necrotic streaks.

Diagnostically susceptible host species and symptoms

- + *Musa* spp. - chlorotic and necrotic leaf streaks.

Diagnostically insusceptible host species

Hordeum vulgare, *Nicotiana benthamiana*, *N. glutinosa*, *N. tabacum*, *Zea mays*.

Susceptible host species

- + *Musa*

Insusceptible host species

- + *Avena sativa*
- + *Hordeum vulgare*
- + *Nicotiana benthamiana*
- + *Nicotiana glutinosa*
- + *Nicotiana tabacum*
- + *Nicotiana × edwardsonii*
- + *Zea mays*

Families containing susceptible hosts

- + Musaceae (1/1)

Families containing insusceptible hosts

- + Gramineae (3/3)
- + Solanaceae (4/4)

Sources of host-range data

Lockhart (1986).

Purification method

Lockhart (1986).

Physical and biochemical properties

Particle morphology

Virion is bacilliform; 119 nm in length; c. 30 nm wide.

Taxonomy and relationships

Badnavirus

Virus(es) with serologically unrelated virions

Cacao swollen shoot and rice tungro bacilliform viruses.

Comments and References

References

- + Lockhart, B.E. (1986). *Phytopathology* 76: 995.
 - + Lockhart, B.E.L. and Autrey, J.C. (1988). *Plant Dis.* 72: 230.
-

Cite this publication as: Brunt, A.A., Crabtree, K., Dallwitz, M.J., Gibbs, A.J., Watson, L. and Zurcher, E.J. (eds.) (1996 onwards). 'Plant Viruses Online: Descriptions and Lists from the VIDE Database. Version: 20th August 1996.' URL <http://biology.anu.edu.au/Groups/MES/vide/>
Dallwitz (1980) and Dallwitz, Paine and Zurcher (1993) should also be cited.



Please send comments, corrections and suggestions to: vide-manager@biology.anu.edu.au

**Descriptions and Lists from the VIDE Database****Sugarcane bacilliform *badnavirus*****Index**

- + Nomenclature
- + Host range, transmission and symptoms
- + Physical and biochemical properties
- + Taxonomy and relationships
- + Comments and References

Data collated by A.A. Brunt and B.E.L. Lockhart, 1988.

Nomenclature**Acronym**

SCBV

ICTV decimal code

07.0.1.0.011

Host range and symptoms

First reported in *Saccharum officinarum*; from north west Morocco; by Lockhart and Autry (1988).

Natural host range and symptoms

- + *Saccharum officinarum* - no conspicuous symptoms.

Geographical distribution

Spreads in Cuba, Morocco, and the USA (Florida and Hawaii).

Experimental host range

Few (<3) families susceptible.

Diagnostically susceptible host species and symptoms

- + *Saccharum officinarum* (clone CP 44-101) - symptomless systemic infection.

Diagnostically insusceptible host species

Chenopodium quinoa, *Nicotiana benthamiana*, *N. glutinosa*, *Sorghum halepense*, *Zea mays*.

Maintenance and propagation hosts

Saccharum officinarum.

Assay hosts (Local lesions or Whole plants)

Saccharum officinarum (clone CP 44-101) (W).

Susceptible host species

- + *Saccharum officinarum*

Insusceptible host species

- + *Avena sativa*
- + *Chenopodium quinoa*
- + *Hordeum vulgare*
- + *Nicotiana benthamiana*
- + *Nicotiana glutinosa*
- + *Sorghum halepense*
- + *Triticum aestivum*
- + *Zea mays*

Families containing susceptible hosts

- + Gramineae (1/6)

Families containing insusceptible hosts

- + Chenopodiaceae (1/1)
- + Gramineae (5/6)
- + Solanaceae (2/2)

Sources of host-range data

Lockhart and Autry (1988).

Purification method

Lockhart and Autry (1988).

Physical and biochemical properties

Particle morphology

Virions bacilliform; not enveloped; 131 nm in length; 31 nm wide.

NCBI sequence data (Entrez search)

Sequence database accession code(s)

- + M89923 Em(40)_vi:SBVORFS Gb(84)_vi:SBVORFS Sugarcane bacilliform virus ORF 1,2, and 3 DNA, complete cds. 3/93 7,568bp. 1 sequence.
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Taxonomy and relationships

Badnavirus

Virus(es) with serologically related virions

Banana streak badnavirus.

Virus(es) with serologically unrelated virions

Cacao swollen shoot, commelina yellow mottle virus, kalanchoe top spotting, yam bacilliform, rice tungro and canna yellow mottle 'commelina yellow mottle viruses'.

Additional comments on relationships

The virus is serologically closely related to banana streak badnavirus, but is probably distinct.

Comments and References

References

- + Bouhida, M., Lockhart, B.E.L. and Olszewski, N.E. (1993). *J. gen. Virol.* **74**: 15.
 - + Lockhart, B.E.L. and Autry, L.J.C. (1988). *Plant Dis.* **72**: 230.
-

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Dallwitz (1980) and Dallwitz, Paine and Zurcher (1993) should also be cited.



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